IN THE CLAIMS

Please amend the claims as follow:

Please cancel claims 1-3, 5-18, 20-21, 25-27, 29-31, and 37-57.

Please add new claims 58-77.

1-3. (Canceled)

4. (Currently Amended) ~~A component as recited in claim 1~~ A component for use in a bearing unit, the component comprising:

a bearing race having an articulation surface and comprising a load bearing and articulation portion,

a volume of superhard material located on said load bearing and articulation portion, and

a superhard articulation surface formed by at least a portion of said volume of superhard material, said articulation surface being formed to permit low-friction articulation in a bearing unit, and said superhard articulation surface forming at least a portion of said load bearing and articulation surface portion, and

further comprising a plurality of roller elements forming a counter bearing surface for articulation against said superhard articulation surface, said counter bearing surface including diamond.

5-18. (Canceled)

19. (Currently Amended) A bearing assembly comprising:

a plurality of roller bearing elements, each roller bearing element having an articulation surface,

a race having an articulation surface,

wherein the plurality of roller bearing elements are configured for rolling across the articulation surface of said race ~~at least one of said articulation surfaces is non-planar~~,

wherein each of said articulation surfaces comprises a diamond articulation surface,

at least one of said bearing and said race including a substrate, and a quantity of diamond located on said substrate, said diamond forming at least a portion of one of said articulation surfaces.

20-21. (Canceled)

22. (Currently Amended) An assembly as recited in claim 19 wherein at least one of the group consisting of the plurality of roller bearing elements and the race is formed from ~~said diamond is~~ a continuous phase of polycrystalline diamond.

23. (Currently Amended) An assembly as recited in claim 19 further comprising a second race configured for rolling engagement with said plurality of roller bearing elements. ~~wherein articulation surfaces of both said bearing and said race include diamond.~~

24. (Currently Amended) An assembly as recited in claim 23 ~~19~~ wherein the second race comprises an articulation surface configured for engagement with the plurality of roller bearing

elements, the articulation surface comprising diamond. ~~of at least one of said bearing and said race include a material other than diamond.~~

25-27. (Canceled)

28. (Original) An assembly as recited in claim 19 wherein said diamond is formed by a process selected from the group consisting of chemical vapor deposition, physical vapor deposition and sintering.

29-31. (Canceled)

32. (Original) An assembly as recited in claim 22 wherein said continuous phase of polycrystalline diamond has a coefficient of thermal expansion CTE.sub.Cd, wherein said substrate has a coefficient of thermal expansion CTE.sub.sub, and wherein CTE.sub.Cd is not equal to CTE.sub.sub.

33. (Original) An assembly as recited in claim 22 wherein said continuous phase of polycrystalline diamond has a residual stress field that tends to improve strength of the bearing unit.

34. (Currently Amended) A bearing unit comprising:

a bearing ~~unit~~ race comprising a polycrystalline diamond compact, the polycrystalline diamond compact comprising:

a substrate that is part of said ~~bearing unit~~ polycrystalline diamond compact, said substrate including a metal,

a ~~bearing unit~~ diamond table sintered to said bearing unit substrate,

a zone between said ~~bearing unit~~ substrate and said ~~bearing unit~~ diamond table, said zone exhibiting a gradient of solvent-catalyst metal to diamond content, said gradient being selected from the group consisting of interface gradient, continuous gradient and incremental gradient, said zone being referred to as a gradient transition zone,

chemical bonds located in said polycrystalline diamond compact which tend to secure said diamond table to said substrate, said chemical bonds including diamond-to-diamond bonds, diamond-to-metal bonds, and metal-to-metal bonds,

a mechanical grip between said bearing unit diamond table and said bearing unit substrate which tends to secure said diamond table to said substrate, said mechanical grip being created at least in part by dilitation of said substrate,

interstitial spaces in said bearing unit diamond table,

substrate metal located in said bearing unit diamond table interstitial spaces,

a residual stress field in said bearing unit polycrystalline diamond compact that tends to enhance the strength of said bearing unit polycrystalline diamond compact, and

the bearing race comprising a ~~bearing unit~~ load bearing and articulation surface on said polycrystalline diamond compact, said ~~bearing unit~~ load bearing and articulation surface including polycrystalline diamond, wherein said bearing unit load bearing and articulation surface is non-planar, and

a plurality of bearing roller elements, each of the plurality of bearing roller elements having a load bearing and articulation surface formed from diamond, wherein the bearing roller

elements load bearing and articulation surfaces have a shape which is complementary to the race load bearing and articulation surface such that the bearing roller elements are configured for rolling across said bearing race load bearing and articulation surface.

35. (Currently Amended) A bearing unit as recited in claim 34 wherein the bearing race sintered diamond table in said ~~bearing unit~~ polycrystalline diamond compact has a coefficient of thermal expansion CTE_{Cd}, and wherein said substrate in said bearing unit polycrystalline diamond compact has a coefficient of thermal expansion CTE_{sub}, and wherein CTE_{Cd} is not equal to CTE_{sub}, wherein said diamond in said bearing unit polycrystalline diamond compact has a modulus M_{Cd}, and wherein said substrate in said bearing unit polycrystalline diamond compact has a modulus M_{sub}, and wherein M_{Cd}, is not equal to M_{sub}.

36. (Currently Amended) A bearing unit as recited in claim 34 wherein said ~~bearing unit~~ polycrystalline diamond compact is polished to an Ra value of between about 0.3 to about 0.005 microns.

37-57. (Canceled)

58. (New) A bearing unit as recited in claim 34, wherein the plurality of bearing roller elements have a circular cross section.

59. (New) A bearing unit as recited in claim 34, wherein the plurality of bearing roller elements are spherical.

60. (New) A bearing comprising:

a first race, the first race having an articulation surface which comprises a superhard material selected from the group consisting of diamond and boron nitride; and

a plurality of bearing roller elements, each of the plurality of bearing roller elements comprising an articulation surface which comprises a superhard material selected from the group consisting of diamond and boron nitride, and wherein the articulation surface of each of the plurality of roller bearing elements has a shape which is complementary to the shape of the race articulation surface, and wherein the bearing roller elements roll across the first race articulation surface.

61. (New) The bearing of claim 60, wherein the first race comprises a compact having a substrate and having the superhard material bonded to the surface of the substrate.

62. (New) The bearing of claim 61, wherein only a portion of the race articulation surface is covered with the superhard material.

63. (New) The bearing of claim 60, wherein the each of the plurality of bearing roller elements comprise a compact having a substrate and having the superhard material bonded to the surface of the substrate.

64. (New) The bearing of claim 63, wherein only a portion of the bearing roller element articulation surface is covered with superhard material.

65, (New) The bearing of claim 60, wherein each of the bearing roller elements has a circular cross section.

66. (New) The bearing of claim 60, wherein each of the bearing roller elements is spherical.

67. (New) The bearing of claim 60, further comprising a second race, the second race having an articulation surface which comprises a superhard material selected from the group consisting of diamond and boron nitride, the second race articulation surface having a shape which is complementary to the shape of the articulation surface of each of the plurality of roller elements, and wherein the plurality of bearing roller elements roll across the second race articulation surface.

68. (New) The bearing of claim 67, wherein the first race and the second race are disposed about a common axis of rotation such that the first race articulation surface faces towards the second race articulation surface and such that the plurality of bearing roller elements are disposed therebetween, and wherein each of the plurality of bearing roller element is in contact with the first race articulation surface and the second race articulation surface.

69. (New) The bearing of claim 68, wherein the first race is rotatable about the common axis relative to the second race, and wherein the plurality of bearing roller elements roll between the first race and second race.

70. (New) A bearing comprising:

a plurality of bearing roller elements, each of the plurality of bearing roller elements comprising an articulation surface which comprises a superhard material selected from the group consisting of diamond and boron nitride;

a first race, the first race comprising a first circular articulation surface which comprises a superhard material selected from the group consisting of diamond and boron nitride, the first circular articulation surface having a shape which corresponds to the shape of the articulation surfaces of the plurality of bearing roller elements;

a second race, the second race comprising a second circular articulation surface which comprises a superhard material selected from the group consisting of diamond and boron nitride, the second circular articulation surface having a shape which corresponds to the shape of the articulation surfaces of the plurality of bearing roller elements; and

wherein the first race and second race are disposed about a common rotational axis and wherein the plurality of bearing roller elements are disposed between the first circular articulation surface and the second circular articulation surface and in contact with the first circular articulation surface and second circular articulation surface, and wherein the plurality of bearing roller elements roll across the first circular articulation surface and the second circular articulation surface to facilitate the rotation of the first race relative to the second race.

71. (New) The bearing of claim 70, wherein the first circular articulation surface and second circular articulation surface comprises a continuous layer of superhard material.

72. (New) The bearing of claim 70, wherein only a part of the first circular articulation surface comprises superhard material.

73. (New) The bearing of claim 70, wherein only a part of each of the plurality of bearing roller elements comprises superhard material.

74. (New) The bearing of claim 70, wherein the first race comprises a compact having a substrate and having the superhard material attached to the surface of the substrate.

75. (New) The bearing of claim 74, wherein the substrate comprises metal, metal carbides, and mixtures thereof.

76. (New) The bearing of claim 75, wherein the superhard material comprises bonded particles of superhard material and metal located between said particles of superhard material.

77. (New)The bearing of claim 76, wherein said metal is a metal used in the substrate.